

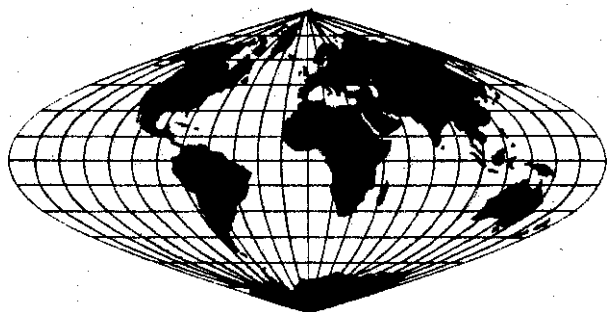
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# **CORNELL/INTERNATIONAL AGRICULTURAL ECONOMICS STUDY**

## **LAND REFORM AND AGRICULTURAL POLICY IN IRAN, 1962-78**

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## INTRODUCTION

The inability of the Iranian agriculture to meet the rapidly expanding requirements of food during the decade of the seventies was a source of acute embarrassment to the government. On the subject of agrarian policies, the regime was especially vulnerable to criticism because the rising dependence on food imports and continuous rural migration were perceived as evidence of a fundamental failure of the land reform. The extreme opponents of the regime charged the Shah with having deliberately ruined the country's agriculture in the interest of foreign powers, and the issue of agricultural policies became a veritable cause celebre. As a consequence of this vulnerability, researchers were often viewed suspiciously by the bureaucracy; open and substantive discussions of rural affairs were rare. The task of agricultural researchers was further complicated by the relative scarcity of accurate data.

With the advent of the Revolution and increased interest in Iranian affairs, there has been an upsurge in the amount of literature on agricultural policies. Much of the writings has been in the context of the supposed causes of the Revolution. However, discussions of agricultural affairs have often been marred by an insufficient familiarity with the Iranian agricultural setting, deficient statistics, ideological considerations, and incessant attempts, evidence notwithstanding, to make the facts fit a preconceived pattern.

The purpose of this paper is to describe the Iranian land reform, the effect of rising petroleum income on the agricultural sector, and the general agricultural policies during the post land reform era and the onset of the Revolution in 1978. Much of the emphasis will be on land reform because of the extreme importance of the subject, but also because any meaningful analysis

of the Iranian agricultural policy during this period must be in the context of the land reform. The paper also aims to dispel some of the widely held misconceptions on the land reform, rural unemployment and poverty and the issues of agricultural prices and protection. It will be seen that widely diffused and commonly held views like --

The Shah's agrarian reforms benefitted only a minority of the peasants, who, in any case, were soon taken over by big companies engaged in large-scale industrialized agriculture. The massive importing of agricultural goods, especially wheat from the United States--coupled with the absence or inadequacy of protective tariffs--contributed to the ruin of countless small farmers, aggravated rural unemployment, and swelled the migration to the cities.

have no foundation in facts.<sup>1/</sup> Perpetuation of these serves to mislead future historians and obscure the valuable lessons from Iran's experience.

Contrary to widely held impressions, the vast majority of the Iranian peasantry received land under the reform. Indeed, land reform brought about fundamental changes to the country's agriculture. The change was not confined to an alteration in the structure and meaning of landownership; the reforms changed a traditional and widespread system of communal production to a pattern of small, individualistic units. The problem was not, as is often claimed, that the land reform was not sufficiently "radical," meaning the coverage was not sufficiently widespread. Indeed, given the level of intensity, and the prolonged period of government sloganeering prior to and during the land reform, the old system was irrevocably transformed. Given the levels of expectations raised by the

publicity, no government could have stopped short of implementing a comprehensive land reform; in practice, the government became prisoner of its own rhetoric. Land reform was launched despite insufficient insight into the workings of the traditional system, and a severe scarcity of data on the actual structure of landownership. It will be seen that land reform demolished the ancient system of communal farming, one that appeared to be suited to the country's agricultural resource endowments. In addition, the administrative machinery proved incapable of dealing with the exigencies created by the land reform, notably the administration of the rural cooperatives, and the issue of property title deeds. Thus, given the failings of the country's bureaucratic apparatus, the land reform proved to be excessively radical.

A frequent claim has been that the Iranian Revolution had its origins in the failure of the land reform to create a classless rural society. The regime's failure to give land to a sizeable minority of rural inhabitants, and the resulting inequitable and uneven land distribution created a substantial body of impoverished and dispossessed persons, and thereby sowed the seeds of revolution. It will be argued that the inclusion of the so-called "landless" laborers in the land reform did not constitute a long-term solution to the problems of rural poverty. Moreover, this thesis is to be appraised in view of the acute labor shortages and rapidly rising urban and rural wages during the years preceeding the Revolution. Indeed, perhaps nowhere were the labor shortages felt more strongly than in the agricultural sector. An indication of the extent of the labor scarcities was the absorption of a large number of unskilled foreign workers in the Iranian economy. Furthermore, it is interesting to note that although large farms were broken up after the Revolution, all attempts to carry out a new land reform, that is, the creation of a classless rural society,

have been unsuccessful.

Shortly after the completion of land reform, Iranian agriculture was faced with a colossal challenge as well as tangible opportunities caused by the rise in petroleum revenues. The increase in urban employment opportunities attracted rural labor in great numbers. In general, the importance of the non-agricultural employment opportunities in the rural areas have been neglected in the current writings. In fact, demand for the products of the rural industries expanded sharply during the long economic boom. In many regions, rural industries became a serious competitor for the dwindling supply of rural labor. Agricultural costs were further affected by the price of land, distortions in the land market, and the inability of the government to solve the issue of deeds and ownership titles. The uncertainty concerning the ownership of land was an important factor in the inability of agriculture to attract sufficient capital, reduced the pace of mechanization at a time of rapidly rising labor costs, and hindered farm consolidation.

With the continuous and rapidly rising population and per capita income, there was a substantial increase in the demand for agricultural products. Since Iran had been mainly self-sufficient in food, the inability of domestic output to meet the expanding requirements, and the consequent rise in imports, gave rise to consternation and criticism. Issues of agricultural imports, prices and protection will be the subject of the final part of the paper. There is some evidence of a stagnant agriculture after land reforms. Concerning agricultural protection, the government had to balance the conflicting claims of the producers, urban consumers, and fiscal necessities. In practice, the government's ability to reverse the declining terms of trade for farm products by means of

tariffs, price policy and the exchange rate was limited. At a time of galloping inflation, the government ability to further raise food costs was severely restricted. The paper will end with a discussion of government investment in the agribusiness concerns, provision of government supplied capital to the agricultural sector, and the failure of the rural cooperatives to serve as an adequate channel for subsidized capital.

This paper is not intended to be a critique of land reform. One can only speculate on the performance of the Iranian agriculture in the absence of land reform during the petroleum boom. Moreover, as demonstrated by the expansion of the rural industries, the rise in imports of agricultural products were in part caused by changing comparative advantage. Finally, given the present concern with agrarian reform in some of the developing countries, notably El Salvador, the experience of the Iranian land reform has some relevance. In addition, some of the remaining issues are pertinent to some of the petroleum exporting countries with a substantial agricultural base.

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Many of the statistics used in this paper are based on the Iranian solar calendar year which starts on March 21. For example, the year 1351 corresponds to March 21, 1972 until March 20, 1973. It will be written as 1972/73.

Throughout the text, frequent reference will be made to the word "village" and its ownership. Traditionally, given the scarcity of water, and the need for security and protection, rural settlements have consisted of villages located near a source of water. The concept of the village has two concurrent meanings. First, it refers to a rural community consisting of a cluster of rural households. In the text, it alludes to a territorial unit cultivated and exploited by the inhabitants of the village. The ownership of a village by one or more individuals meant the right to receive a portion of the agricultural output produced by the residents in return for certain duties and obligations.



## LAND REFORM AND THE FARM STRUCTURE

By the early 1950's, four categories of landholdings were discernable. First, there were large owners possessing one or more villages; included in this group were the crown lands, the endowed lands (vaghf) administered by religious bodies, and the holdings of individual landowners. Secondly, there were the medium and small landowners holding a fraction of one or more villages (khordem-alek). Thirdly, there were independent peasant operators scattered throughout the country. Lastly, there were a relatively small number of commercial farms, in particular, in the Mazandaran and Gorgan regions. 2/ Reliable figures on the structure of landownership during this period do not exist; one can only draw inferences from the post land reform statistics. 3/

Land reform was launched in early 1962 with the intention of limiting private ownership of agricultural resources, transferring land to tenant farmers, and eradicating the widespread practice of sharecropping. It consisted of compulsory purchase of land from the owners and subsequent transfer to the cultivating tenants and sharecroppers. The sale of land to tenants was not new; in 1932/33 the state lands in the provinces of Sistan and Lorestan were distributed among the tenants. 4/ The practice continued after the Second World War when crown lands were sold by the Pahlavi Foundation during the fifties and the sixties. About 2000 villages and farms were sold to the farmers. 5/

Given the dearth of statistics on the structure of landownership, it was not possible to verify or refute some of the estimates. The Minister of Agriculture declared in 1962 that 15,000 villages were owned by landlords possessing more than five villages. Government sources states that 400 to 500 landowners owned

57 percent of all the villages.<sup>6/</sup> Such claims were highly exaggerated. Post land reform figures indicate about one quarter of the villages were owned by landlords possessing more than one village. Several factors militated against the accumulation of wealth in the form of land. The widespread practice of polygamy and the resulting myriad of descendants, the absence of primogeniture under Islamic laws, the discontinuation of Tuyul, the practice of farming out taxes and the grant of land by the Royal Court to favorite individuals, and repeated political upheavals during the twentieth century are to be noted. In addition, the growing urban economies, and the poor and unreliable road conditions throughout the country considerably reduced the attraction of large accumulations.

The land reform was carried out in three phases, and was officially completed in 1972/73. Since there were no reliable statistics on land ownership, each subsequent phase was in part an attempt to redress the perceived shortcomings of the previous stage. Phase One dealt with owners possessing more than one village; each owner was allowed one village of choice or its equivalent, and the remaining villages were sold to the government which then transferred the property rights to the tenants. Lands worked by machinery and wage labor as well as orchards, groves, tea plantations and vineyards were exempted from distribution. The number of the so-called mechanized units was relatively small since in 1960, it was estimated that only ten percent of all the agricultural units used mechanical ploughing, of which 95 percent relied on tractor rentals and custom ploughing. In addition, a sizable proportion of the stock of agricultural machinery was concentrated in the provinces of Gorgan and Mazandaran.<sup>7/</sup> Concerning orchards, groves, vineyards and plantations, the land reform law declared the land to be the property of the landlord. However, in conformity with the Persian tradition, it declared the roots, plants and the

trees to be the property of the tenants. In practice, since the tenants retained possession, the only practical limitation on their ownership was the inability to legally sell the property without the consent of the landlord.

There are varying estimates on the number of villages and farm families affected by the first Phase; according to government sources 13,904 villages were eligible for purchase and distribution. There is some disagreement on the actual number divided among the cultivators; the 1966 Iran Almanac cited 12,875 villages. The Ministry of Rural Affairs and Cooperatives stated 16,426 villages were distributed between 781,322 families under Phase One.<sup>8/</sup> It appears that a little over one quarter of the villages were owned by landowners owning more than one village and that the actual ownership of land was less concentrated than it was commonly believed.<sup>9/</sup>

The value of the lands were set at ten times the amount of annual tax paid by the owner; landlords were to be compensated in 15 yearly installments at six percent rate of interest. The cultivators were to repay the government in 15 installments, and documents were to remain as collateral in the custody of the Cooperative Bank. According to the pamphlet published by the Land Reform Organization, the 8707 villages were valued at 5,115, 417, 590 rials (\$72.5 million). The first installment paid to the landlords was 562,429,016 rials (\$7.89 million). The average value of a village was set at 587,506 rials (\$8330), payable over 15 years at a six percent rate of interest. In reality, while the landowners were treated harshly, the cost borne by peasants was nominal. Moreover, as the cultivators fell behind in their annual payments, the Central Bank simply funded the deficit.<sup>10/</sup>

The Second Phase was launched in 1963 and was comprehensive in scope. Every landlord was given one of several options on land not taken in Phase One:

1) sell the land to the peasant cultivators directly, or to the government on terms equal to those of Phase One; 2) divide the land with the cultivators according to existing crop shares; 3) rent the land to cultivators for thirty years; 4) set up joint stock companies with the cultivators; 5) purchase the tenants cultivation rights. Tenants on endowed lands were given ninety-nine year leases.

According to the Ministry of Information 11/, a total of 2,466,292 families benefitted from Phase Two. The breakdown was as follows: 210,017 landlords leased their land to 1,151,071 cultivators; 21,952 owners set up joint stock units with 132,677 tenants; 17,663 landlords divided the land with 154,104 tenants; 7,821 landlords purchased the cultivation rights of 16,875 tenants; 3,472 landlords sold their lands to 56,205 tenants; 10,466 endowed properties were leased to 163,491 cultivators mostly for 99 years. Lastly, it is stated that 782,181 "landowners" became farmers. The last item is based on a misspecification of the word "landowner," and a rich source of confusion. Disregarding the 782,181 "landowners" and 16,875 peasants who sold their cultivation rights, a total of 1,657,548 peasant households benefitted under Phase Two. The third and final phase was introduced in 1968. It stipulated that all lands rented or operated as joint stock units were to be sold to the peasants. Phase Three was officially completed in 1972/73.

It appears that some 2.4 million peasants received land under the three phases of the reforms. However, the figure underestimates the numbers involved.

There is considerable variation in the assessment of the number of land recipients under the reforms. Writing in 1968, Keddie estimated that 14 to 15 percent of the peasants received land. Weinbaum stated that 800,000 families benefited; Abrahamian, citing other sources, stated 1.638 million peasant households received land. Hooglund believes, following extensive study of government publications, that nearly 2 million farmers received land. Amuzegar implies close to 3 million producers benefited from the land reform. The World Bank stated the number of beneficiaries were in excess of 3 million cultivators.<sup>12/</sup> According to official figures, the number of beneficiaries under all the phases was 3,247,614 families.

Under the reform program, membership in a rural cooperative was made mandatory for those receiving land. Therefore, the cooperative membership figures should give an indication of the numbers affected. In 1972/73, the year the land reforms were officially completed, 2.065 million farmers belonged to the cooperatives, indicating that at least 2 million producers became landholders.<sup>13/</sup> However, because of limited government resources and slowness in setting up cooperatives, the membership clause was often waived.<sup>14/</sup> Therefore, the figure of 2 million is an underestimate. Additional insight is gained by an examination of the cooperative membership figures after the completion of the land reform. Between 1972/73 and 1977/78, membership of the cooperatives expanded by exactly 200,000 producers per year (Table I, ), and stood at 3.001 million members in 1977/78. According to the Fifth Development Plan targets, the plan aimed at extending the coverage of the cooperatives to 85 percent of the villages by 1977/78. Evidently, at least one-third of the producers were not covered by the cooperatives when the land reforms were completed. In view of the cooperative membership numbers, the World Bank and Amuzegar's estimates

TABLE I. MEMBERSHIP OF RURAL COOPERATIVES  
1964/64 - 1977/78

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	<u>Membership (000)</u>
1963/64	571
1964/65	668
1965/66	791
1966/67	961
1967/68	1104
1968/69	1278
1969/70	1430
1970/71	1606
1971/72	1723
1972/73	2065
1973/74	2263
1974/75	2488
1975/76	2685
1976/77	2868
1977/78	3001

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SOURCE: Ministry of Rural Affairs and Cooperatives, Rural Cooperatives in Iran, Research Group No. 33, Teheran 1971.

The Central Bank of Iran, Annual Reports, 1973/74 - 1978/79.

of nearly 3 million beneficiaries appear to be accurate. Indeed, Amuzegar stated 2.5 million producers were affected by the second and third phases of the land reform.

Using the 1972/73 Agricultural Statistics published by the Iran Statistical Center (Markaz-e-Amar-e Iran) and estimates of the Agricultural and Rural Advisory Mission of the World Bank, Price estimated the structure of landholdings and output shares in terms of value for 1972 (Table 2).<sup>15/</sup> The farm structure described by Price consisted of 2.533 million farms with an average size of six hectares. There were 7,000 units larger than 100 hectares, averaging 258 hectares. Next, there were 10,000 farms between 51 and 100 hectares, and averaged 70 hectares. These two categories occupied 16 percent of the farm area. At the lower end of the scale, there were 1.688 million farms with less than five hectares, with an average area of just one hectare, occupying 17 percent of the land. In terms of land area, by far the most important group consisted of farms of 11 to 50 hectares, with an average of 17.5 hectares, and occupied 46 percent of the land. The second most important group in terms of land area were farms of six to ten hectares, averaging 7.3 hectares and occupying 21 percent of the farm area. The latter two groups consisted of 828,000 farms, and represented one-third of the farm families and two-thirds of the agricultural lands. Overall, 34 percent of farm families owned 83 percent of the land, and conversely, 66 percent owned 17 percent of the farm area. However, Table 2 does not describe the country's farm structure since at least 500,000 producers are unaccounted for. It is reasonable to infer that the table portrays the results of the second and third phases of the land reform, especially in view of the fact that some 17,000 landlords opted for the division of land, and in the table there are the same number of farm units larger than 51 hectares; furthermore,

TABLE II

Farm Size	Families Or Farms	Farm Area	Average Size (ha)	Share Of Gross Output	Share Of Marketed Output
	'000	'000	%		
Large Farms Larger than 100 ha	7	1810	12	6	
Medium Farms 51 - 100 ha.	10	700	4	36	77
11 - 50	394	7030	46		
Small Farms 6 - 10 ha.	434	3180	21		
3 - 5	545	1810	12		
1 - 2	342	490	3		
less than 1 ha.	801	300	2	41	19
Sub-Total	2533	15330	100	83	
Pastoralists	100				
Other People Not Owning Land	790			17	4
Total	3423	15330		100	100

SOURCE: O.T.W. Price, Towards a Comprehensive Iranian Agricultural Policy, IBRD, Agricultural and Rural Development Advisory Mission (ARDAM), Iran, September 1975.

Figures based on the 1351 Agricultural Statistics, Iran Statistical Center and ARDAM estimates.



the mechanized units exempted under the first phase of the land reform are not reflected in the table.

A more realistic view of the farm structure is obtained if the 781,000 land recipients under Phase One are also included. It should be noted that under the first phase, with the exception of a few mechanized units, all the village lands were divided between the cultivators. Consequently, the farm structure created by the land reforms was much less concentrated than indicated by Price.<sup>16/</sup> Although the land area covered by 17,000 farms larger than 51 hectares represented no more than 16 percent of farmlands affected by Phase Two, a potentially explosive situation was created. In approximately 17,000 villages the cultivating peasants had less land to work with than previously, and many had to share the village irrigation sources with their former landlords. The disputes over water rights and boundaries were frequent before the Revolution. Furthermore, it was difficult to expect peasant cultivators in a village to accept part-ownership of land and water resources while the surrounding hamlets were fully owned by the local villagers.<sup>17/</sup>

Table 2 is indicative of the nature of the farm problem, namely, that some 15.3 million hectares of farmland are worked by 2.533 million farm units; the main problem is one of rural overpopulation. A drastic redistribution of land will not alter the overall farm average size of six hectares. The 17,000 farms larger than 51 hectares occupied 2.51 million hectares; if this land had been added to the holdings of 1.688 million farms under five hectares, this group's average would have doubled to 3.2 hectares. It is frequently stated that seven hectares is the minimum needed to support a family of five with basic subsistence needs.<sup>18/</sup> However, given the geographic and climatic variations in Iran, extreme care should be exercised in the use of overall average figures.

It is of interest to note that although large farms accounted for 12 percent of the land, they produced only 6 percent of output. The share of output of medium sized farms, defined as 11 to 100 hectares, was 36 percent, although their land share was 50 percent. Small farms, defined as less than 10 hectares, produced 41 percent of gross agricultural output from 38 percent of the land. The remaining 17 percent of output was produced by pastoralists and "other rural people not owning land." In terms of marketed surplus, that is domestic supply of food for the non-farm population, the contribution of the small farms was 19 percent and the main bulk was produced by the large and medium sized farms. In particular, this group produced much of the marketed output of grains, and the small farmers concentrated more on production of higher valued and more labor intensive cash crops.

Small farms are seen to be more productive in terms of output per unit of land not because small peasant proprietorships are optimal for Iranian conditions, or because peasant farms were better managed. The reason is that small farms are generally located on better soil. Regional examples are numerous and a few will be given. The rice-producing areas of the Caspian littoral, one of the most productive agricultural regions of the country, are overwhelmingly dominated by small units; generally, a single hectare of rice-land is sufficient to provide a family of five with subsistence needs as well as cash income. Other examples include the agricultural regions of Northern Khorassan, Isfahan, and West Azarbaijan. This fact has a direct bearing on any future agricultural policy; any land redistribution per se is unlikely to increase substantially the total supply of food to the urban sector. Historically, the most productive lands have been the most densely settled and the most intensively worked. This usually meant lands with the best water resources. With the advent of land

reform and the transfer of land to the cultivators, this tendency was unaltered.

According to Table 2, there were 790,000 rural families classified as not owning land. This corresponded to 23 percent of the rural families, and one-third of rural families owning land. It is believed that before the land reforms 40 percent of the rural households were "landless," that is, without regular cultivation rights on the landlord's estates. A detailed study of an Iranian village in 1963 showed 40 percent of the village families were landless and were known as khoshneshin, a common description of those without cultivation rights.<sup>20/</sup> According to a 1960 sample survey of Iranian agriculture, 1.3 million households were without regular cultivation rights, and 1.9 million had regular cultivation privileges; again indicating 40 percent of households were landless.<sup>21/</sup> The khoshneshin class were not included in the land reform program and received no land. With the social and economic changes brought about by the land reforms substantial numbers of landless families were forced to migrate to the urban areas. Bartsch estimated that between 1956 and 1966 rural population grew at an average of 1.96 percent per year, while the urban population expanded at 4.52 percent annually.<sup>22/</sup> A tentative comparison of the results of the 1960 Agricultural Sample Survey with Table 2 indicates that between 1960 and 1972/73, rural population increased at 1.35 percent. Consequently, the pace of rural migration quickened during the second half of the 1960's. Moreover, according to the 1976 census, between 1966 and 1976, rural population increased from 15.3 to 16 million, while total population increased by one third.

A frequent criticism of the land reforms was the failure to give land to the landless. It is evident, in the light of the above, that inclusion of an

additional one million families in the land reform would not have solved the problem of poverty and underemployment in the rural areas. It was evident during the first part of the Seventies that many farms were becoming submarginal that is, they were too small to provide the owners with an adequate per capita income. It was believed some improvement in income was possible through greater supply of irrigation water and better cultivation practices; but the scope was limited.<sup>23/</sup>

Traditionally, in regions of water scarcity, in other words much of the country, sharecropping peasants were organized into production teams commonly known as boneh. In areas with plentiful water like the Caspian littoral and parts of western Iran, rents were often fixed and were paid in cash as well as in kind; in these regions an individualistic mode of production was the dominant norm. Bonehs were dominant in the central, eastern, and southern parts of the country. Each village was divided into several bonehs; each team cultivated a given area of land with a given number of peasants.<sup>24/</sup>

The actual number of bonehs in a village was determined by the availability and the frequency of irrigation water. Total supply depended on the number of irrigation sources available; frequency of supply was determined by the pro rata distribution of the water. A specific number of days was known as the madar; a madar of ten, for example, signified division of water into ten daily shares; likewise, a madar of six indicated six daily divisions. The number of bonehs in a village corresponded to the irrigation madar, that is each boneh received twenty-four hours of water in a given number of days. Usually, depending on climatic and soil conditions, each ghanat sustained between six and twelve bonehs.<sup>25/</sup> Villages with large numbers of bonehs had numerous irrigation

sources.

Given the frequency of water availability, the area that could be planted in a season was determined by the rate of flow (keshesh) of the water and was defined in terms of pairs of oxen (joft). A "pair" corresponded to an area that could be ploughed and cultivated by a pair of oxen. Each boneh planted several pairs; the actual area planted depended on the supply of water; although land units were defined in terms of oxen, it was actually the amount of water that was the determinant.<sup>26/</sup> Village lands were classified into various categories, usually designated as good, moderate and least desirable; within each classification, fields were divided into equal sizes and lots were drawn between the bonehs. Consequently, each boneh planted several fields, the number of which was determined by the number of soil classes.

The labor requirements per boneh were determined by the area cultivated. In practice, membership corresponded to the number of pairs of oxen; for example, a "three pair" boneh had usually six members. The main conditions for membership were hereditary cultivation rights (nasagh), full-time residence in the village, and the agreement of the landlord.<sup>27/</sup> The composition of boneh was hierarchical and seniority was based on ownership of plough animals and appointment by the landlord. Each member's share of the crop was based on the position in the hierarchy.

There were two distinct types of boneh. The first was commonly known as arbab-rayati boneh (landlord-peasant); the second was commonly referred to as a gavbandi boneh. In the first category, the landlord exerted direct control over the affairs of the boneh, and was responsible for the provision of plough animals and seeds, in addition to land and water. In the second, others acquired or gained the right to supply all or a fraction of the animal power required by the boneh. As a general rule, the arbab-rayati boneh were more common in

villages where the landlords resided or had easy access to animal power.<sup>28/</sup> The landlord's share of the crop was dependent on the type of boneh; in the arbab-rayati case, since the landlord provided land, water, animal power and seed, he obtained sixty to seventy percent of the crop. In the gavbandi case, the gavbands obtained a quarter of the crop, having provided seed and oxen, and the landlord's share was between 40 and 50 percent. The cultivators' share was about one quarter and since the gavbands also worked as cultivators, their real share was higher. It should be noted, however, that these were nominal shares, and the actual system was more complicated. There were numerous other claimants on the output, including the field guards (dashtbans), carpenters, bath attendants, and the mullah; they obtained a fixed allowance before the division of the crop. Safinejad describes in detail some of the traditional and widespread practices used by the peasants to augment their share.<sup>29/</sup>

The distinction between the two types of bonehs became crucial during the land reform. The division of land between the villagers was based on the boneh hierarchy, and the division of crops between cultivators, including the gavbands. Consequently, in villages where the bonehs were based on the arbab-rayati system, the division of land was relatively equal; in the other villages, land distribution was unequal. Given the variation in land qualities and desirability, such as proximity to an irrigation source, each cultivator received land parcels in several locations.

Bonehs were an integral part of a hierarchical and traditional society. However, the system was suited to the country's agricultural resource endowments, especially the shortage of irrigation water; it facilitated efficient use of water and prevented the excessive fragmentation of the fields which would

have been the result of Islamic inheritance laws.<sup>30/</sup> Safinejad laments the passing away of bonehs after the land reform. With some exceptions, the bonehs gradually disintegrated after the land reform. Sharecropping, on the other hand, survived in scattered parts of the country. Recently, exaggerated and erroneous claims of the extent and the nature of sharecropping have been made. In this respect, it is important to distinguish between two distinct types of sharecropping. Institutional sharecropping, whereby the peasants worked on the landlords' estates on a regular basis for a share of the output, was rare. Indeed, not more than a single case of sharecropping is noted in Safinejad. Likewise, Nowshirvani's extensive study of agricultural mechanization in Iran noted a single incidence of sharecropping.<sup>31/</sup> The practice of sharecropping between the cultivators who had received land under the land reforms was more common. The present author discovered numerous cases of elderly farmers whose offspring had left the farm choosing to rent their land to other farmers or landless workers on a sharecropping basis. It will be noted below that this phenomenon was caused in part by the distortion in the price of farmlands.<sup>32/</sup>

The law enabling the government to set up the so-called farm corporations was enacted during the land reforms. Essentially, the measure was intended to promote and increase farm mechanization, facilitate farm consolidation, and help the peasant population to achieve greater prosperity. In practice, several adjoining villages in selected regions were formed into a corporation and the government assumed the management of each unit. In exchange for the property rights, the peasant proprietors were given shares in the corporation. The exchange of property rights for shares was not a novelty since under the bonehs each member had a share in the output of the unit.<sup>33/</sup>

In 1976/77, there were 89 farm corporations with some 33,000 households,

and covering some 130,000 hectares. The numbers increased to 94 in 1977/78, the year before the Revolution. In all, the farm corporations included 850 villages.<sup>34/</sup> Although the farm corporations covered a very small fraction of the agricultural units, the experiment amply illustrated the shortcomings of the bureaucratic machinery in the conduct of agricultural affairs. The farm corporations were meant to serve as a channel to direct subsidized government capital and modern management into traditional agriculture. In practice, they were often starved of capital, and frequently the government-supplied managers were ill-prepared to tackle some of the problems associated with the management of farms consisting of several thousand hectares. Overall, the experiment was not a happy one. The farm corporations were dissolved shortly after the Revolution.

The case of the four farm corporations in the southern part of the province of West Azarbaijan illustrates the point. From the point of view of water and land resources, three of the corporations were extremely well-endowed. They were situated downstream from the Shahpur I dam located on the Zarin-run River near the city of Mehabad.<sup>35/</sup> However, in 1978 the author found the amount of available farm machinery woefully inadequate for the large tracts of available and fully irrigated land. In addition, all the managers complained of inadequate personnel and maintenance facilities. One spoke of lengthy delays in the construction of feeder canals and the associated land levelling.



## PETROLEUM INCOME AND AGRICULTURE

The Iranian economy began to grow rapidly during the second half of the sixties. The growth was made possible by the increasing petroleum income and was sustained until the application of fiscal and monetary brakes in 1976/77. The early years of the boom were characterized by relative price stability. By the early 1970's, there were growing inflationary pressures, and with the sudden rise in the price of oil in 1973/74 and the associated increase in government expenditures, inflation became a serious problem. One of the most conspicuous results of the economic boom was the inflation in the price of land.

During this period, land speculation became an easy way to acquire wealth and a secure hedge against inflation. In addition, the market for agricultural land had been greatly distorted by the land reform, and legislation concerning the sale of farmlands. Recipients of land under the land reforms were barred from the sale of farmlands until the completion of payment to the Agricultural Cooperative Bank. The vast majority of those who had completed the payments and whose lands were not bound to the Bank, were without proper legal deeds. Traditionally, property deeds were usually issued to landlords; however, substantial numbers of landholders were without the proper deeds because of past unresolved conflicts concerning village property rights. With the advent of land reform, the division of land between several million farmers, and the accompanying fragmentation of farmlands, the issue became extremely complicated. The task of surveying the fragmented plots and issuing deeds to several million farmers was quite beyond the capability of a centralized and often slow-moving bureaucracy, especially the Ministry of Justice. Consequently, the vast majority of farmers were without deeds establishing ownership.

This resulted in a dual market in farmlands and distortion in land prices. Farmers not possessing deeds found it difficult to dispose of their lands at realistic prices since buyers were reluctant to invest in properties lacking the necessary papers. Lands with the legal documents were sought after and were at a premium. In effect, farmland prices were distorted since they did not correspond entirely to value in agricultural use. The unsatisfactory state of affairs in the land market hindered farm consolidation into more economical units, and ruled out meaningful mechanization in much of the country's agriculture. The distortion in the land market, and the uncertainty concerning legal titles, were important factors in the failure of agriculture to attract sufficient amounts of outside capital and commercial credit. It can also explain in part the continued practice of sharecropping, especially among the small and medium-sized farmers. As a growing number of farms became submarginal, younger members of the farm families left the farm, and the older generation was obliged to hire wage labor, or to resort to sharecropping. Also, those farmers who left farming and obtained urban employment found it advantageous to rent their land on a sharecropping basis.

Rural migration had been underway for several decades, and had provided much of the labor requirements of the growing urban economy. After the land reforms substantial numbers of landless families left the countryside and sought a living in the towns. With rapid economic growth from the second half of the sixties, there was a marked improvement in employment opportunities outside agriculture, drawing both the landless as well as the "non-wage family" agricultural workers. The rural migration was not confined to those seeking jobs; the wealthy peasant cultivators, those who had been favored by land reform, were

among those taking up residence in towns in order to take advantage of better living conditions and greater business opportunities. However, despite the influx of workers into towns, substantial labor shortages were developing in the urban construction industry. The Central Bank index of unskilled urban construction wages increased from 65.0 in 1972/73 to 273.2 in 1977/78 (1974/75 = 100), more than a fourfold rise in as many years (table 3). The latter index is especially important because of the close relationship between unskilled urban construction wages and agricultural wages. Because of the winter cold, the construction industry in Iran is seasonal, with the peak period of activities occurring between spring and fall seasons. Many of the construction workers were actually seasonal migrants, who were drawn by the high construction wages, hence rural wages closely followed construction wages. The coincidence of seasonal activities in the two sectors created a double pressure on both urban and rural wages.

Traditionally, the making of bricks was concentrated around the cities. With expanding urban regions and rising land values, stricter zoning regulations, and most important, improved road conditions, there was a relocation of brick making to the rural areas. The making of bricks is a labor intensive activity with simple raw materials consisting of clay, water, and fuel. Given relatively cheap transportation and the booming demand for bricks, some of the producing areas were found at considerable distances from urban areas. By the mid-1970's, brick making was largely manned by migrant workers from Afghanistan.<sup>36/</sup> Employment of Afghan workers was not confined to non-agricultural activities. A 1976 sample of sugarbeet farmers in Neishabur region of Khorassan noted employment of Afghan migrant workers.<sup>37/</sup>

Table 3

INDEX OF UNSKILLED URBAN CONSTRUCTION WAGES, 1966/67 - 1977/78  
1974/75 = 100

<u>Year</u>	<u>Index</u>
1966/67	35.0
1967/68	37.1
1968/69	43.4
1969/70	51.9
1970/71	54.3
1971/72	55.4
1972/73	65.0
1973/74	75.8
1974/75	100.0
1975/76	151.4
1976/77	204.3
1977/78	273.2

SOURCE: Central Bank of Iran, Annual Reports.

Carpet weaving is one of the oldest and by far the most important rural industry in terms of employment and income generation. Carpets are made throughout Iran. Traditionally, carpet weaving provided employment during winter months when little agricultural activity takes place. With little capital requirements, it is suited to household production. The carpet industry had been expanding at least since 1956.<sup>38/</sup> Comparing the 1966 census with that of 1956, Bartsch noted that the total number of full-time carpet weavers nationwide increased from 186,000 to 425,000. Of the increase of 239,000, a total of 123,000 were estimated to have taken place in rural areas, and 116,000 in urban areas.<sup>39/</sup>

Demand for Persian carpets is determined by export as well as domestic demand. Export demand is primarily determined by taste factors and fashions in industrialized countries and the industry is subject to cyclical fluctuations. Internal demand is determined by domestic economic conditions. The rapid expansion of the carpet making industry between 1956 and 1966 indicates the importance of exports. The second half of the fifties were booming years and were followed by a major political crisis and a severe economic recession during the first half of the sixties. Domestic demand for carpets, consequently, was sluggish during most of this period. Carpet weaving experienced an unprecedented boom during the seventies. A strong export demand coincided with rapidly rising domestic demand causing marked increases in carpet prices.<sup>40/</sup> Carpet weaving became a serious competitor for rural labor.

The findings of a 1976 farm sample in the agricultural region of Neishabur, cited above, are illustrative. The study indicated the importance of carpet weaving as a source of employment and income in the rural areas. The stratified sample consisted of 104 sugarbeet farmers. Of these, 28 farmers owned and

operated a carpet workshop on their premises. Taking the small farmers, the study estimated that between 30 and 40 percent produced carpets, using both family and wage labor.<sup>41/</sup>

During the summer of 1976 a weaver in his or her late teens earned between 400 and 500 rials per day; a skillful weaver commanded up to 700 rials. All the large commercial farmers roundly condemned carpet weaving as a social evil to be curtailed by government legislation. They stressed the long term health hazards and the foregone educational opportunities caused by weaving, not to mention the reduction in the supply of agricultural labor during the summer months and the resulting higher wages. Given the high and expanding demand for rugs during this period, weaving provided a lucrative and year-round source of employment for farm people. Apart from needing little capital requirements, there were few market risks involved; the rug merchant who "commissioned" the rugs provided the basic raw materials, design specifications, and cash advances, and purchased the finished products at a specified price. The short-run opportunity cost of weaving was income from work on the family farm or as agricultural wage laborer; given the harsh work conditions and the less lucrative returns from farming, it was not surprising that carpet weaving attracted so many persons.<sup>42/</sup> In this case, some of the shortfalls in the availability of farm labor were met by the Afghan migrant workers.

## AGRICULTURAL IMPORTS AND PROTECTION

Before the decade of the 1960's, Iran was self-sufficient in food. The main exceptions were tea, sugar and vegetable oils. Agricultural imports registered some rise during the latter decade, but the volumes were small in relation to total domestic production and use. There was a substantial increase in the import of grains and animal products during the 1970's.

The marked rise in grain imports began in 1971/72 (Table 4). Between 1962/63 and 1970/71, Iran's wheat imports had averaged 180,000 tons per year. The comparable figure for the year's 1971/72 to 1977/78 was 987,000 tons or more than a fivefold increase. More spectacular was the increase in rice imports; yearly rice imports averaged 15,000 tons during the sixties and 206,000 tons during the seventies. In 1977/78 nearly 600,000 tons of rice were imported, representing a third of domestic consumption. Animal feed grains showed a similar trend. Imports of barley were practically nil before 1971/72; they had reached 333,000 tons by early 1978. The same holds with corn. It should be noted that very little corn can be grown domestically as animal feed, and nearly all the requirements have to be imported.

The increase in imports was not confined to food and feed grains. In 1977/78 Iran's imports of red and white meat were about 130,000 tons, increasing to over 150,000 tons in 1978/79 despite the political upheavals and the prolonged shutdown of the country's ports. The same rapid rate of increase was seen in the case of dairy products. In 1976/77, 17,000 tons of eggs and 50,000 tons of butter and cheese were imported. The respective figures for the following year were 27,000 and 67,000 tons.<sup>43/</sup>

With the exception of a few selected cash crops, reliable statistics on output of farm products are scarce. Using population, per capita consumption, and import figures, one can arrive at fairly reliable estimates. Traditionally, Iran has had one of the highest per capita consumption of wheat in the world.

TABLE 4

IMPORTS OF GRAIN, 1962/63 - 1977/78 (000 tons)

	<u>Wheat</u>	<u>Rice</u>	<u>Barley</u>	<u>Corn</u>
1962/63	34.9	19.2	1.0	*
1963/64	56.2	*	*	*
1964/65	495.5	13.1	6.1	5.4
1965/66	198.1	47.8	.1	.5
1966/67	212.2	13.4	1.4	*
1967/68	61.8	10.1	*	8.9
1968/69	534.6	24.3	*	70.5
1969/70	.4	1.8	*	.1
1970/71	22.6	5.6	*	11.5
1971/72	993.3	60.4	191.8	62.4
1972/73	711.3	91.8	23.1	70.3
1973/74	784.8	4.0	107.5	130.8
1974/75	1423.9	150.8	178.4	222.9
1975/76	1439.6	286.1	203.8	77.9
1976/77	405.7	259.7	219.7	213.5
1977/78	1159.2	589.8	333.8	344.0

\* Indicates less than 100 tons were imported.

SOURCE: Foreign Trade Statistics of Iran, Annual Reports,  
Ministry of Commerce, Iran.



Average per capita use, including seed and carry-over requirements is close to 160 Kgs. In 1966/67, the country's population was estimated at 26.04 million. Consequently, total wheat requirements were 4.2 million tons. Given imports were 212,000 tons, domestic production was close to 4 million tons. By early 1977/78, population had increased to 36.4 million; assuming an unchanged per capita consumption, total wheat requirements were 5.8 million tons, and domestic output was close to 4.8 million tons, since imports were averaging one million tons per year. Consequently, it appears that the domestic output of wheat grew at an average of 1.8 percent which was substantially below the population growth rate of 3.1 percent. In reality, however, the rate of growth of wheat output was lower.

The above calculations were made on the assumption that per capita wheat use remained unchanged at a time of rapidly rising per capita income. Clearly, this is not realistic. Being a staple product, it is almost certain that by 1971 bread had become an inferior good. Consequently, one can rule out rising per capita consumption in response to increased income. On the other hand, one can expect substitution of other foods for bread in response to rising income. Rice is the most likely and direct substitute for bread in the Iranian diet, especially imported rice. The varieties of imported rice are considered inferior to those produced domestically. Being substantially cheaper, imported rice was consumed mainly by the less affluent members of society, including the rural people. Therefore, imported rice can be considered a direct substitute for bread. With such a rapid rise in rice imports, substantial decline in wheat imports could have been expected. While wheat imports did fall substantially in 1976/77, they rose to 1.1 million tons in 1977/78 and remained at a similar level in the following year. It can be concluded that wheat output grew at less

than 1.8 percent per year between 1966/67 and 1977/78; it is likely that wheat output remained at best constant during this period.

Nearly all of Iran's rice is grown on the Caspian Sea littoral. Traditionally, the country was an exporter of rice to the neighboring countries, including Russia.<sup>44/</sup> Even during the fifties, Iran was a net exporter of rice. The turnabout was caused by the increase in demand and the substitution effect due to rising income. In the early sixties, per capita consumption of rice was about 20 Kgs. per year; by 1977/78 it had nearly doubled. Thus, given the magnitude of the increase in population and demand, large quantities had to be imported despite rising domestic output.

Imports of animal products increased substantially during the seventies. At the relatively low level of per capita consumption, demand for animal products increased rapidly with rising incomes. It is interesting to note the increase in imports of animal products was associated with a rapid rise in the imports of feed grains. Clearly, the country's livestock sector was growing and substituting imported feed for animal products.

Iran has been a traditional importer of sugar. Before the Bolshevik Revolution, Russia was the main source of sugar. The first sugar factory was set up by the government in 1894 near Teheran. It operated for a brief period and succumbed to Russian competition. The 1930's saw the beginning of a modern sugar industry, and the late fifties and early sixties witnessed a feverish and rapid expansion of the industry. By the late 1960's, Iran was close to self-sufficiency in sugar, with imports representing no more than 10 percent of domestic production (Table 5). The rise in the ratio of imports to production after 1972 was not caused by falling output; it was caused by rising demand. Production of beet and cane sugar grew steadily up to 1976/77. In 1968/69 per capita sugar

TABLE 5

PRODUCTION AND IMPORTS OF SUGAR 1967/68 - 1977/78

	<u>Domestic Output</u> <u>(000 tons)</u>	<u>Imports</u> <u>(000 tons)</u>	<u>Percent Of Imports To</u> <u>Domestic Production</u>
1967/68	415.3	202.7	48.8
1968/69	485.1	34.1	7.0
1969/70	512.1	66.0	12.9
1970/71	568.8	61.4	10.8
1971/72	585.7	87.5	10.1
1972/73	579.6	158.8	27.4
1973/74	608.5	286.0	47.0
1974/75	639.5	219.5	47.0
1975/76	665.9	596.4	89.7
1976/77	721.9	262.4	36.3
1977/78	632.3	447.5	70.7

SOURCE: Cereals, Tea, and Sugar Organization, Annual Reports on Output of Sugar Factories, Teheran.

Foreign Trade Statistics of Iran, Annual Reports, Ministry of Commerce, Teheran.

consumption was 20.1 Kgs; in 1977/78 it had increased to 30.2 Kgs. Consequently, with population increase, sugar requirements doubled in a decade.

One of the many problems created by inflation was the overvaluation of the Iranian currency, the rial. First, thanks to the rising petroleum revenues, there were no pressing balance of payments problems; in fact, the Central Bank was accumulating foreign reserves despite the large expenditure programs. Second, overvaluation of the rial had no effect on petroleum exports since the latter were priced in dollars. Third, Iran imported large quantities of food, consumer items, as well as capital goods. Devaluation would have meant higher cost of imported goods, and a reduction in the pace of industrialization, and in the mechanization of domestic agriculture. In addition, devaluation would have further aggravated the inflation in the price of food items, especially given the inelastic demand in the short and medium terms. It was believed at the time that much of the inflation was caused by rising cost of imported products and a deterioration in the terms of trade.

The level of tariff protection given to the newborn domestic industries was sufficient to offset any exchange disadvantage. For example, the automobile industry was effectively shielded from foreign competition by a tariff wall that kept domestic prices substantially above foreign prices. However, given the rising demand for food and the growth of industry, erection of tariff walls around the agricultural sector was not in the realm of the practical.

Food prices were effectively checked through imports. By reducing the price of imports in terms of domestic currency and increasing the price of agricultural exports in terms of foreign currencies, the overvalued rial reduced the competitiveness of agriculture. Demand for some of the traditional exports like cotton, hides and skins, and raisins is elastic because of numerous

international competitors. A notable exception is the demand for Persian carpets. Because of reputation, taste factors, and the relative absence of effective substitutes, the demand for Persian rugs was relatively inelastic with respect to price, a fact borne out by the behavior of the market during the decade of the seventies.

There is a substantial amount of misinformation and misconception on the issue of price protection. The reason appears to have been the government's liberal import policies, subsidies on the price of essential goods like bread, sugar, cooking oils, and animal products, and the general attempt to check the rise in the price of food. In addition there was a failure to provide and widely disseminate price statistics. Wheat was the commodity most often cited for not having received adequate price protection. It was commonly believed that domestic wheat producers had received negative price protection, in other words, domestic wheat prices had been maintained below foreign prices. An examination of price statistics over the relevant period does not support the charge (Table 6). The only noteworthy case of negative protection were the years 1974/75 to 1976/77 when conditions on the international markets were unsettled because of a global food crisis. Even then, the average domestic wholesale price of wheat was not less than 85 percent of the cost, insurance, and freight (cif) price of imported wheat. In most years domestic prices were above import prices.

There was substantial government participation in the wheat market. It directly purchased a sizable fraction of the domestic output through the cooperative networks;<sup>45/</sup> furthermore, a government agency directly imported and marketed foreign wheat. From table 6 it is evident that government trading exerted a damper on annual price fluctuations. Secondly, domestic wheat prices

TABLE 6

DOMESTIC AND IMPORT PRICES OF WHEAT, 1962/63 - 1977/78

	<u>Average Domestic Wholesale Price Of Wheat (rial/kg)</u>	<u>Average Import Price cif (rial/kg)</u>	<u>Ratio of Domestic To Import Price</u>
1962/63	7.86	5.44	1.44
1963/64	7.41	8.87	0.83
1964/65	7.95	5.91	1.34
1965/66	8.33	4.95	1.68
1966/67	7.38	5.41	1.36
1967/68	5.98	5.32	1.12
1968/69	5.52	5.26	1.04
1969/70	6.14	16.47*	.37
1970/71	7.68	7.38	1.04
1971/72	8.40	5.79	1.45
1972/73	7.11	6.16	1.15
1973/74	7.92	6.45	1.22
1974/75	12.58	14.73	.85
1975/76	13.40	15.75	.85
1976/77	n.a.	17.62	--
1977/78	12.60	11.37	1.10

SOURCE: O. Aresvik, Agricultural Development in Iran, (Praeger Publishers, 1976).

Foreign Trade Statistics of Iran, Annual Reports, Ministry of Commerce, Teheran.

\* Only 499 tons were imported in that year.

tended to stay in line with import prices. Indeed, this is not surprising; the yardstick used by the government in determining its purchase prices of wheats of varying qualities were the import prices. Exceptions did occur when low import levels and shortfalls in domestic production caused domestic prices to rise substantially above government price. In 1977/78, government prices were just under 13 rials per kilo, and were raised to 18 rials after the Revolution, market prices were in the region of 20 rials. Government policy regulated inter- and intra-seasonal variations in the price of wheat and kept domestic prices in line with import costs. There were several reasons why the government was not anxious to provide growers with significant protection. Bread is a staple in the Iranian diet, therefore higher prices and lower imports would have been a regressive measure, causing hardships to the urban poor. Secondly, supply elasticity for grains in the short run was small; reliable and adequate expansion in output had to come from irrigated land, and not from dryland wheat. The main beneficiaries of higher wheat prices would not have been the small farmers since they produced relatively little surplus wheat and barley. Traditionally, bread prices in the urban areas were stabilized at a low level by means of a variable subsidy on the price of wheat. Urban millers purchased wheat at subsidized rates from a government agency, and in turn were obliged to sell flour to bakers at a set price. Higher wheat prices necessitated higher subsidies unless the retail price of bread was raised. However, bread was not the only subsidized item; the list included sugar, vegetable fats, imported mutton, chicken and dairy products.<sup>46/</sup>

For many items, government price supports were either unnecessary or irrelevant given domestic shortages. Fluid milk is such a product. Given little international trade in milk, farm and retail prices were kept high because of

shortages. In its attempt to build and improve the domestic dairy herd, pedigree cows were imported and sold to dairymen at subsidized rates. Rice and mutton provide further interesting examples. Because of consumer preferences, domestic varieties of rice and mutton sold at a large premium over imports. Consumers preferred domestic rice varieties which sold at twice the price of imported ones; similarly, because of taste and religious considerations domestic mutton sold at a high premium over imported "frozen" varieties. Needless to say, in the absence of imports, domestic prices would have been much higher.

The case of the sugarbeet industry illustrates some of the limitations of the agricultural price policies, and the main problems faced by the Iranian agriculture. Sugarbeets are grown throughout most of the country. It is a labor intensive crop, providing employment and income for a substantial number of rural inhabitants. Protection of the sugar industry had a dual purpose. It stimulated production and reduced reliance on imports; second, it provided additional employment and income to farmers and agricultural workers. The transportation industry was also a main beneficiary since each fall between four and five million tons of beets were transported.

Traditionally, the marketing of sugar was highly regulated. All domestic processors were obliged to sell their output to the government at a set price; in addition, the government was the sole importer and distributor of foreign sugar. Retail prices were also set by the government. This arrangement was designed to protect domestic farmers and processors, stabilize retail prices, and provide the Treasury with revenue (Table 7). With the rising cost of imported sugar from 1972/73, the increased prices paid to producers, and a commitment to stable retail prices in the face of rising per capita consumption, the sugar program became a heavy fiscal drain.



TABLE 7

DOMESTIC AND IMPORT PRICE OF GRANULAR SUGAR 1971/72 - 1977/78

	<u>Price Paid to Domestic Factories rials/Kg</u>	<u>Average Import Price (cif) rials/Kg</u>
1971/72	15.75	9.06
1972/73	15.75	12.52
1973/74	19.25	17.85
1974/75	25.50	43.70
1975/76	32.00	61.25
1976/77	35.50	64.56
1977/78	39.45	25.32
1978/79	43.85	16.09

SOURCE: M.G. Madjd, Navasanate Tolid Chogandar Ghand-e- Iran, Plan and Budget Organization, Teheran, Azar 1359 (1981). (Instability in the Production of Sugarbeets in Iran)

In addition to favorable prices, few crops offered the marketing and institutional advantages of growing sugarbeets. The price of the crop was known prior to planting and it was specified in a contract drawn between the farmer and the processor. The factories supplied the farmers with the necessary credits of cash and other inputs at a nominal rate of interest. These arrangements were especially effective in helping small farmers to plant, harvest and transport the crop; without these advances, many small farmers could not have planted sugarbeets. In addition, longer term government capital to sugarbeet farmers was made available through the sugar processors.<sup>47/</sup>

Not surprisingly, there was a gradual increase in sugarbeet output during most of the decade. But production fell noticeably in 1977/78, the year before the Revolution. A main reason for the decline in output was the rise in labor and transportation costs. It was argued that agricultural wages and urban construction wages were linked since rising urban construction wages drew labor from the farming sector, thereby increasing rural wages. Assuming similar trends were maintained in rural and urban wages, sugarbeet prices and wages stayed in line up to 1974/75 (Table 8). A marked divergence appears after that year; while sugarbeet prices increased 62.3 percent in the proceeding years, average labor costs rose by 173.2 percent.<sup>48/</sup>

Given the relatively short harvest and the perishable nature of the product, an economic and timely transportation of the crop is extremely important. During the late sixties and early seventies, trucking rates had typically varied between 180 and 400 rials per ton, depending on distance and road conditions. With growing demand for transportation space caused by the booming economic conditions, the increase in the number of sugarbeet producers and total output, transportation rates rose rapidly after 1974. During the 1976/77 harvest,

TABLE 8  
COMPARISON OF SUGARBEET OUTPUT, PRICES, AND LABOUR COSTS  
1969/70 - 1977/78

	<u>Total Output (million tons)</u>	<u>Index of Sugarbeet Prices</u>	<u>Index of Urban Construction Labour Costs</u>
1969/70	3.48	59.2	43.4
1970/71	3.85	59.3	51.9
1971/72	3.96	61.5	55.4
1972/73	3.92	63.8	65.0
1973/74	4.23	71.7	75.8
1974/75	4.12	100.0	100.0
1975/76	4.59	136.9	151.4
1976/77	5.27	152.1	204.3
1977/78	4.18	162.3	273.2

SOURCE: M.G. Madjd, Policies Concerning Sugar Production in Iran.  
1978, Ph.D. Thesis, Cornell University, Ithaca, New York.

Central Bank of Iran, Annual Reports.

competition between the farmers drove transportation rates to as high as 900 rials per ton for relatively short distances. This was equivalent to one-third of the factory-gate price of sugarbeet.

In response to rising labor costs, a substantial number of producers abandoned sugarbeets despite the market and institutional advantages of growing the crop.<sup>49/</sup> The relatively high levels of protection given the sugarbeet industry were not sufficient to offset the structural problems of the industry. The vast majority of the farms were too small for efficient mechanization; indeed, meaningful mechanization in the small farms was not possible, and the larger units were not able to raise mechanization in a relatively short period.

Moreover, it can be asked if significant additional protection provided a long-range solution to the structural problems of sugarbeet farming. Past experience had shown that price increases were quickly overtaken by the rising labor costs. The levels of price protection required to ensure maintenance of some parity between prices and costs could not have been easily justified in terms of economic efficiency or equity. Sugar production represented a small part of the agricultural sector. While it was practical to afford special protection to selected crops, the conflicting constraints and limitations placed on the government were amply illustrated in the case of the exchange rate and to some extent by the price of wheat.

In an attempt to combat inflation in the years preceeding the Revolution, direct attempts were made at controlling the price of fruits and vegetables, as well as some non-perishable goods by attacking "profiteering" and "hoarding." In practice, it meant fining retailers, and to a lesser extent wholeslaers for "overcharging." Much more drastic measures were administered after the Revolution for "hoarding" and "profiteering." These measures were not only

ineffective in raising supplies and reducing prices, they interfered with effective functioning of markets and price mechanisms. In its drive against "hoarding," the government actually impeded the storage of products needed for continuous use over time, and the role of price in the temporal allocation of consumption. The attack on the retailers was particularly misplaced because of the competitiveness of the market, the perishability of fruits and vegetables, and the absence of high entry barriers. Traditionally, the urban wholesale fruit and vegetable markets (maidan) were controlled by relatively few and powerful wholesalers who exercised market power against retailers and the small vegetable and fruit farmers. In addition, producer prices were affected by the low standards of grading and packaging that resulted in damage to the product on the way to the market.

Concerning the allocations of capital to agriculture, with rising labor costs, a distorted land market, declining terms of trade for farm products, and the high rate of return to capital outside agriculture, it was not surprising that agriculture could not compete successfully for the supply of private funds. Consequently, adequate provision of subsidized capital became vital to the growth and development of the agricultural sector. Government credit to agriculture was channeled mainly through two publicly owned banks. The Agricultural Cooperative Bank supplied the nationwide network of rural cooperatives with loanable funds for members; the Agricultural Development Bank of Iran (ADBI) was instrumental in transferring government and to a lesser extent foreign capital into agribusiness and commercial ventures.

It was seen above that membership of rural cooperatives was required of those receiving land under the land reforms; the cooperatives were intended to serve the needs of the new owner cultivators, and in particular, provide credit

and subsidized inputs. Under the old system, a vital role of the landlord was provision of interest free and timely credit for both production and consumption needs of the peasants.<sup>50/</sup> The land reform attempted to replace this traditional and decentralized system with a central one. It was noted above that, from the beginning, the cooperative system was hampered by a severe shortage of resources, and especially qualified personnel. Membership of the cooperatives grew steadily, and in 1977/78 over three million producers belonged to rural cooperatives (Table 9). On the eve of the Revolution, nearly 85 percent of the villages were covered by the cooperatives. The total amount of loans provided by the cooperatives grew from 10.0 billion rials (\$143.9 million) in 1972/73 to 30.1 billion rials (\$430 million) in 1977/78. The number of loan recipients per year varied between 1.1 and 1.4 millions or about one half of the membership. Average loan size increased from 8650 rials (\$122.7) in 1972/73, to 22,800 rials (\$323.4) in 1977/78.

It is evident the small farmers were not the recipients of government generosity. In fairness, it should be stressed that the cooperative networks, having gotten off to a difficult start, were still in relative infancy, and were in the process of expansion. The average credit given to a farmer contributed to the out of pocket expenses of plantings and harvest in a given year, but was not sufficient to allow capital improvements. It is believed that the Cooperative Bank was unhappy with the repayment record of its borrowers as many continued to borrow in order to meet their existing obligations. It was rumored that some of the loans were spent on consumer durables. The Bank was in a relatively weak position, since in practice, it could not foreclose the newly created small owner cultivators. There was much talk after the Revolution of a moratorium on all debts owed by the small farmers.

TABLE 9

MEMBERSHIP AND PROVISION OF LOANS BY THE RURAL  
COOPERATIVES, 1963/64 - 1977/78

	Membership (000)	Total Loans (Billion Rials)	Loan Recipients (000)	Percent Of Members Receiving Loans	Average Loan Size (Rials)
1963/64	571	.50	151	26	3329
1964/65	668	1.43	328	49	4355
1965/66	791	1.88	391	49	4814
1966/67	961	3.02	558	58	5411
1967/68	1105	4.07	670	61	6080
1968/69	1278	5.04	738	58	6826
1969/70	1430	5.75	833	58	6899
1970/71	1606	6.31	901	56	7002
1971/72	1723	6.81	876	51	8015
1972/73	2065	10.07	1165	56	8650
1973/74	2263	12.37	1176	52	5470
1974/75	2488	19.74	1363	55	14482
1975/76	2685	24.70	1611	60	15330
1976/77	2868	28.00	1400	49	20000
1977/78	3001	30.10	1320	44	22800

SOURCE: Ministry of Rural Affairs and Cooperatives, Rural Cooperatives in Iran, Research Group  
No. 33, Teheran, 1971.

The Central Bank of Iran, Annual Reports, 1973/74 - 1978/79.

The other government agricultural credit institution was the ADBI. There was a significant increase in importance of this bank as a source of credit (Table 10). The amount of credit and outright aid approved by the Bank rose from 1.3 billion rials (\$18.4 million) in 1971/72 to 25.8 billion rials (\$368.6 million) in 1976/77, having reached a peak of 48.6 billion rials (\$694.3 million) in 1975/76. The Bank participated in large capital intensive projects, and its participation rate was nearly 50 percent of the total investment per project, including the value of the land. Given that even a large proportion of commercial farms lacked property deeds, despite certification from land reform authorities, the Bank showed little flexibility on the acceptability of documents. Furthermore, the work of the Bank was often hampered by the refusal of the Ministry of Water and Power to grant permits for installation of new irrigation sources.<sup>51/</sup>

Included in the figures for total credit and aid are the amounts paid out by the Bank to the unsuccessful agribusiness ventures in Kuzestan. Most of these projects were initially set up with foreign capital and management participation.<sup>52/</sup> With lack of commercial and economic success the foreign participants withdrew and the ADBI was obliged to take over the shares and active management of the concerns. Most of the ventures became bottomless pits for government money; the successful ones like the sugar cane project at Daimcheh, and the much older one at Haft Tapeh, were to be plagued by poor labor relations. Most of the agribusinesses were dissolved after the Revolution and the lands were divided between the former cultivators and the employees who happened to work on them.

Some seven remaining agribusinesses were located in the other provinces. Usually, they were food processors who directly produced some of their raw



TABLE 10

PROVISION OF CREDIT BY THE AGRICULTURAL DEVELOPMENT  
BANK OF IRAN, 1971/72 - 1976/77

	<u>1971/72</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>
Number of Loan Applications Approved	69	159	309	534	682	580
Amount of Credit And Outright Aid Approved (million rials)	1301	1282	2560	17205	48600	25801
Average Credit and Aid Given Per Project (million rials)	18.8	8.0	8.2	32.2	71.2	44.4
Average Total Investment Per Project (million rials)	43.3	30.8	18.2	57.7	148.7	91.5
Percent of Bank Credit of Total Investment	43.5	26.1	45.4	55.7	47.9	48.5

SOURCE: Agricultural Development Bank of Iran, Annual Reports.

material requirements. Among the private concerns, perhaps the most widely recognized were Yek-o-Yek in Fars and Chin-Chin in Khorassan. Both firms specialized in the processing and canning of fruits and vegetables. The country's largest sugar mill, located in Shirvan, in northern Khorassan, produced a substantial part of its sugarbeet consumption.

Among the government concerns were the Fars Meat Complex near Shiraz, Dashte Moghan in Azarbaijan, and Ziaran Feedlot near Ghazvin. The Fars Meat Complex stood as a monument to the folly of the Ministry of Agriculture, and the waste of scarce resources by the government. The complex, costing over \$50 million, was a fully integrated processing facility. It was built to procure underfed livestock from the nearby tribal peoples, fatten the animals, slaughter, grade and market the products. It turned out that the only animals it could procure were live sheep imported from Australia. Consequently, the complex remained idle.

## CONCLUSION

The land reforms fundamentally changed the structure and organization of the Iranian agriculture. The magnitude of the measure is reflected in the numbers involved: some 3 million cultivators received land, and the number of landowners affected was in excess of 230,000. In addition to the structural changes, the reforms altered the traditional notion of landownership. The customary and widespread concept of landownership involved rights and privileges in exchange for certain obligations, and was to a lesser extent concerned with the actual physical possession of the land. The same pattern was exhibited in the workings of the bonehs. The land reforms changed this into a system of small owner cultivators.

The reforms were carried out in three phases. Shortly before the completion of the measures in the early seventies, there was a dramatic rise in the imports of agricultural products. Considering wheat, the most important crop, average annual imports were 830,000 tons for the period 1971 to 1973, compared to an average of 186,000 tons for the previous three years. There was a further increase in the import levels following the increase in the price of petroleum. Average annual import for the period 1974 to 1977 was 1.1 million tons. More spectacular was the rise in the imports of highly income elastic commodities like rice, animal products and sugar.

Although, the land reforms caused some disruption in the production of grains, there is little evidence that they brought about drastic reductions in the supply of agricultural products. Shortly after having undergone profound changes, Iranian agriculture had to adapt to the new circumstances following the rise in petroleum income. Associated with the latter were increased urban

employment opportunities, expanding demand for food, and changes in the level of comparative costs and advantages. A consequence of the land reform was that it made the country's agriculture singularly ill-prepared to make the necessary adjustments and meet the new market conditions. In a country that had been accustomed to self-sufficiency in food, the mounting import levels gave rise to much consternation and criticism.

In the search for the causes of the Revolution, there has been some analysis of the agricultural problems. It has been frequently argued that the reforms were not sufficiently radical, that is they covered only a small fraction of the peasantry and an even smaller fraction of the cultivated land. It has also been frequently argued that there was a deliberate neglect of the agricultural sector by the government after the land reforms; the failure to allocate sufficient capital and provide adequate price protection encouraged rural migration. Therefore, it is implied, if the land reforms had been more radical, and had the government supplied more capital to the rural cooperatives, and the price of wheat had been maintained at a higher level, events would have followed a different course.

It was seen that the commonly-held views of the land reforms have no foundation in reality, and the perpetuation of these only serves to obscure the issues. The subject of price policy and exchange rate were examined in some detail. Given the rapid increase in income, the expansion in non-agricultural employment opportunities, and the persistence of severe inflation, the effectiveness of conventional price and exchange policies and the ability of the government to use them were restricted. The limitations of the agricultural price policies per se were illustrated in the case of sugarbeet production; price

increases were soon overtaken by the rapid rise in the costs of production, especially labor and transportation costs. Moreover, the desperate and unsuccessful attempt to control food prices through direct controls, and the attack on retailers was a reminder of the limitations on the ability of the government to influence economic factors.

Government involvement in rural affairs expanded substantially with the land reforms; in practice the government attempted to provide some of the services that had been traditionally fulfilled by the landlords. Historically, some segments of the Iranian bureaucracy had been involved in the administration of government-owned estates; however, the experience was usually confined to leasing the land to individuals and collecting revenues. This limited involvement did not provide sufficient preparation to grasp and deal with the intricate problems of the rural sector.

The highly centralized system was ill-suited to the task, and the problems were compounded by the scarcity of data and trained manpower. As a result of the land reforms, the government machinery was faced with tasks in which it had little prior experience or aptitude. Consequently, it was not surprising that the farm corporations were badly run, the rural cooperatives did not receive adequate capital, and nearly one half of the membership of the cooperatives did not receive government supplied annual short-term credit and had to seek costlier alternative sources. Moreover, government agencies were often caught in a tangle of contradicting and conflicting regulations. The issue of title deeds was extremely important because of the large number of farmers affected, the fragmentation of land and the deleterious effects on investment in agriculture and farm consolidation. However, it turned out that the uncertainty generated concerning the ownership of land was as an effective measure to combat

speculation in land and higher land prices. Thus, although the avowed policy was to encourage investment in agriculture through liberal provision of subsidized government capital, most often farmers were barred because they lacked the necessary papers. Often, those who qualified were faced with the strict zoning regulations of the Ministry of Water and Power, and the adamant refusal to permit the installation of new irrigation sources. The restrictive policy with respect to the exploitation of the aquifers ran counter to the attempt to increase investment in agriculture.

The frequently stated claim that the government neglected agriculture tends to conceal the issue of extensive government involvement in agriculture which was a direct result of the land reforms and the accompanying legislation. It also tends to obscure the important conclusion to be drawn from the Iranian experience: Iran illustrated some of the unforeseen consequences of tampering with and radically changing a well-established and ancient agricultural system in a short period. It is of interest to note that an Iranian-style land reform has been in progress in El Salvador. The measures, under United States sponsorship, consist of three phases in which land is given to sharecroppers and tenants. Under the first and the second phases, large and medium sized farms are turned into peasant cooperatives. The third phase allows tenants to apply for up to 17 acres of land. The success of the land reforms will be dependent in part on the workings of the cooperatives. Moreover, for a small country that is dependent on agricultural exports for its prosperity and growth, the economic and social consequences of a failure can be extremely serious.

## FOOTNOTES

1. E. Rouleau, "Khomeini's Iran," Foreign Affairs, Volume 59, No. 1, Fall 1980, page 3.
2. S. Okazaki, The Development of Large-Scale Farming in Iran: The Case of the Province of Gorgan. 1968, Tokyo.
3. Even at present there is some uncertainty about the actual number of villages. Consequently, it is not surprising that the distribution of landholdings by size was not known.

Keddie, using agricultural surveys conducted during the fifties, states 49,000 villages. N. R. Keddie, "The Iranian Village before and after Land Reform," Journal of Contemporary History, July 1968. Amuzegar states the figure of 60,000 in J. Amuzegar, Iran: An Economic Profile, The Middle East Institute, Washington, D.C., 1977, page 48. Hooglund states 67,000 villages. E. Hooglund, "Iran's Rural Inheritance," MERIP Reports No. 99, September 1981, page 17.
4. Land Reform Organization, Eslahat Arzi dar Iran, Teheran, 1343 (1964/65) Safinejad also notes the distribution of land in Sistan in 1932/33 and formal sale to the farmers in 1937/38. J. Safinejad, Boneh before the Land Reforms, Toos Press, Teheran 1353, pages 247-57.
5. Amuzegar, op.cit., page 219.
6. See Keddie, op.cit., page 83.
7. V. F. Nowshirvani, Production and Use of Agricultural Machinery and Implements in Iran: Implications for Employment and Technological Change. 1978, Plan and Budget Organization, Teheran, pages 27-28 and 33. In 1948 there were 240 tractors in the country. Between 1948 and 1958, tractor imports averaged less than 200 per year. Between 1958 and 1960, annual imports averaged nearly 1500 units.
8. Ministry of Rural Affairs and Cooperatives, The Eleventh Anniversary of the Passage of The Land Reform Law, Teheran, 1972, page 33.
9. Keddie believes the landowners were largely able to evade the first phase of the reform by transferring their land to relatives. "The landlords, having had fair warning at least since 1959-60 bill that a division of their land based on maximum holding might be enacted, had had two years to transfer ownership of their villages to their wives, children and relatives, and this land was allowed to remain where it was." Keddie, op. cit., page 82. If this was entirely the case, then it is surprising there was any land distribution under the first phase. What prevented the landlords from transferring all their holdings to their wives, children and relatives?
10. Land Reform, The World Bank, Sector Policy Paper, 1975, page 68.
11. Ministry of Information, Iran, Offset Press, Inc. 1971, page 156. Cited in H. Shapouri, The Impact of Credit on Agricultural Production in Iran 1958-68, Cooperative Credit, and Land Reform, 1975, M.S. Thesis, Cornell University, page 33.

12. Keddie, op. cit., page 87. M. G. Weinbaum, "Agricultural Policy and Development Politics in Iran," Middle East Journal 31, Autumn 1977, page 434. E. Abrahamian, "Structural Causes of the Iranian Revolution," MERIP Reports, No. 87, May 1980, page 23. E. Hooglund, "Iran's Rural Inheritance," op. cit., page 16. J. Amuzegar, op. cit., page 221. The World Bank, op. cit., page 68.

13. Central Bank of Iran, Annual Report, 1352.

14. J. P. C. Carey and A. G. Carey, "Iranian Agriculture and its Development: 1952-73," International Journal of Middle East Studies, 1976. "Resources and trained and technical personnel were in such short supply, however, in the government agencies concerned with agriculture, that membership in the new cooperatives was limited, and land was sometimes given to farmers with no cooperative to join." Page 365.

15. O.T.W. Price, Towards a Comprehensive Iranian Agricultural Policy, International Bank for Reconstruction and Development, Agricultural and Rural Development Advisory Mission (ARDAM), Iran, September, 1975, page 14.

16. According to Abrahamian, the farm structure after the land reforms consisted of 2.84 million units of which 1300 farms were larger than 200 hectares, 44,000 were between 61 and 200 hectares, and 600,000 were between 11 and 50 hectares, and 2.2 million units were under 10 hectares, of which 1 million owned less than 3 hectares. E. Abrahamian, op. cit., page 23. Given that in 1978 there were approximately only 50,000 tractors in the country, such heavy concentration in ownership of agricultural resources seems unlikely.

17. A good account of the disputes between the villagers and the former landlords is found in Safinejad, op. cit., page 41 and 220-1.

18. For example, E. Hooglund, "Iran's Rural Inheritance," op. cit., page 16.

19. Having almost no specialized farm machinery, small farms do not have an advantage in specialization, and tend to diversify output as a means of reducing market and climatic risks. Larger farms have specialized machinery and tend to be more specialized with substantial emphasis on grain production. V. F. Nowshirvani, Production and Use of Agricultural Machinery and Implements in Iran, op. cit.,. Safinejad found that after the land reform the village concentrated more on profitable cash crops, like cotton, and neglected wheat and barley. Safinejad, op. cit., page 205.

20. W. G. Miller, "Hosseiniabad: A Persian Village," Middle East Journal, Autumn 1964, pages 483-98.

21. The 1960 Agricultural Sample Survey was a joint work of FAO and Iranian authorities. The results were published in 15 volumes. Keddie, op. cit., page 78.

22. W. Bartsch, Problems of Employment Creation in Iran, International Labour Office, Geneva, 1970.



23. Price, op. cit., page 15.

24. In these regions, water rather than land is the most limiting factor of production.

25. The actual number of bonehs was very often less than the madar since for two or three days the water was allocated to the orchards and the alfalfa fields. A ghanat is the traditional underground channel that brings water to the surface.

26. Land area was also defined in terms of seed requirement measured in kharvar (300 kgs). Regionally, there was a fixed relationship between a kharvar and given number of pairs.

27. Safinejad, op. cit., page 43.

28. "Usually, if a landlord resided in the village, or was sufficiently powerful to control village affairs and supervise the bonehs cultivation, he acquired the gavband rights (the right to provide oxen power). But in villages where landlords or their representatives, for reasons diverse, could not supervise the cultivation, nor had any knowledge or control over the village affairs, the vacuum was filled by the gavbands. They became the intermediaries between the landlords and the village. Under these conditions, many of the privately owned, and nearly all of the endowed (moghoufeh) and public holdings (khaleseh) were administered in the gavbandi mode.

"The gavbands were mostly local inhabitants....There were several classes of gavbands; some possessed a single or a pair of oxen and worked as cultivators on the land. But some acquired such wealth and power and became the real bosses (arbab) of the village." Safinejad, op. cit., page 95 and 132. Translation by the author.

29. J. Safinejad, op. cit., pages 55-60.

30. It was noted that the membership of the boneh corresponded to the number of oxen used for cultivation; for example, a two-and-a-half joft boneh had five regular members. Since the landlord obtained a fixed share of the crop, his interest lay in maximizing total output, that is, in the short-run, expanding the boneh membership to the point of zero marginal product of labor. In practice, the marginal product of the members' labor was not zero since the boneh had to resort to "outside" labor during the peak season. The marginal product of an additional member was less than the average net share of the existing member cultivators.

31. J. Safinejad, op. cit., page 267. V. F. Nowshirvani, Production and Use of Agricultural Machinery and Implements in Iran, op. cit., page 111.

32. Despite all the evidence to the contrary, Hooglund states, "In general, the agricultural modes of production in 1978 were not much different from what they had been prior to the land reform program. That is, Iranian agriculture was dominated by absentee owners who exploited their holdings through the use of various sharecropping agreements with the cultivators." Such a statement is astonishing to anyone even remotely familiar with Iranian agriculture. The author goes on to say, "These owners reinvested virtually none of their profits in production." And then on the next page he says, "In addition, peasants sold

considerable land to absentee owners who then converted it from the production of essential food grains to more profitable non-food crops or pastures." E. Hooglund, "Iran's Rural Inheritance," op. cit., pages 18-19. In addition to these contradictory statements, the weakness of Hooglund's analysis is further shown by the fact that a great obstacle to farm consolidation was that peasant farmers could not legally sell their lands since they lacked the necessary title deeds. Even large numbers of commercial farmers did not possess title deeds. O.T.W. Price, op. cit., pages 13 and 20.

33. In West Azarbaijan, the author found that the production of sugarbeets, a profitable and labor-intensive cash crop, on the farm corporations was on a sharecropping basis. The corporation prepared the fields and planted the entire crop. The fields were subsequently divided and each shareholder was allotted a plot. In exchange for nurturing and harvesting the crop, a shareholder received one half of the value of the output of the plot in addition to a share in the overall profits of the enterprise. This mode of production was found to be more efficient in terms of yields per hectare, and more acceptable to the shareholders than the payment of wages and an eventual share of the profits.

34. J. Amuzegar, op. cit., page 17.

35. The three corporations supplied sugarbeets to the sugar mill in Miandoab. The fourth was a supplier of sugarbeets to the smaller mill in Piranshahr. Fuller description is found in the author's Report on the Production and Transportation of Sugarbeets in West Azarbaijan, Iran Planning Institute, Teheran, November 1978.

36. An example was Shal, a large and prosperous village located on the banks of the Kharud River, 180 kilometers west of Teheran and 60 kilometers south of Ghazvin in the Ramand Baksh (district). Traditionally, Shal was famous for its fine breed of sheep, and the high quality of its raisins. Because of the fine clay soils of the area, the village became an important brickmaking center supplying mostly Teheran as well as Ghazvin. The industry was largely manned by Afghans as well as migrants from southeastern Iran.

37. See the author's unpublished Ph.D. dissertation, Policies concerning Sugar Production in Iran, 1978, Cornell University, Ithaca, New York, Chapter 5.

38. The rapid expansion in rug weaving during the latter parts of the nineteenth century is noted by V.F. Nowshirvani in The Beginnings of Commercial Agriculture in Iran, April 1975, Yale Growth Center, New Haven, page 41.

39. Bartsch, op. cit., pages 13 and 17.

40. Carpet exports were \$56.4 million in 1969/70, and increased to \$90.6 million in 1972/73, "as 'Oriental rugs' returned to fashion instead of wall-to-wall carpeting." Carey and Carey, op. cit., page 377. Domestic demand was so strong that, during the mid-seventies, there was considerable re-export of fine Persian rugs from Western Europe to Iran.

41. The author's Ph.D. thesis op. cit., Chapter 5, especially pages 140-44.

42. The assertion by F. Kazemi of "rapidly declining handicraft and non-farming occupations" is incorrect in the case of carpet weaving, by far the most important rural handicraft. Indeed, as noted in the text, carpet weaving was flourishing in Khorassan, the country's most important agricultural province. F. Kazemi, "Urban Migrants and the Revolution," Iranian Studies, Volume XIII, 1980, page 260.

43. Foreign Trade Statistics of Iran, Ministry of Commerce, Teheran, 1357 (1978/79).

44. V. F. Nowshirvani, The Beginnings of Commercial Agriculture in Iran, op. cit., pages 26-27. He mentions cotton and grains in particular. Because of geographical proximity, and easy transport (Caspian Sea), substantial amounts of rice were exported to Russia from Gilan and Mazandaran.

45. In 1977/78, the cooperatives purchased 910,000 tons of wheat and barley. Central Bank of Iran, Annual report, 1357.

46. Total government outlays on food subsidies had grown to nearly 3 billion dollars before the revolution. E. Hooglund, op. cit., page 19.

47. In order to encourage mechanization, in 1973/74 the government undertook to lend 15,000 rials per hectare of sugarbeets grown for the purchase of farm machinery. A short term interest free loan of 6,000 rials per hectare was given to those producers who switched to row planting. The measures were designed to benefit large producers since the small farm units were too small to undertake mechanization. Nowshirvani, Production and Use of Agricultural Machinery and Implements in Iran, op. cit., page 20.

48. The short-run elasticity of supply of sugarbeets with respect to price was estimated to be between .57 and .72. The short run elasticity of supply with respect to labor costs was between -.23 and -.22. For a description of the estimation procedures the reader is referred to the author's Navasanate Tolid chogander Ghand-e-Iran, Azar 1359. Plan and Budget Organization, Teheran, pages 24-31. (Instability in the Production of sugarbeets in Iran). Between 1973/74 and 1977/78, labor costs increased by 260 percent while sugarbeet prices rose by 113 percent. In many areas, cotton is an important substitute crop. According to the Central Bank figures, the wholesale price of cotton approximately doubled between 1971/72 and 1977/78. However, since cotton prices were largely determined by export prices, substantial annual fluctuations were frequent.

49. The decline in output was caused entirely by the drop in the number of cultivators. The author's Navasanate Tolid Chogander Ghand-e-Iran, op. cit., statistical appendix.

50. "Under the arbab-rayati bonehs, the landlords provided the necessary advances to the boneh members. Monthly allowances to boneh members provided by the landlords or their representatives, varied between 20 mans (a man equals three kilos) of wheat and 20 tumans in cash, and 30 mans of wheat and 40 tumans before the land reform. The advances were given during nine months of the year....Wheat advances were deducted from the winter crops, and the cash advances were deducted from the summer crops. Under the gavbandi bonehs, the gavbands supplied the advances." Safinejad, op. cit., page 138. Miller also noted the importance of landlords in the provision of credit. "Under the old

landlord system, it was in the landlord's self interest to keep his peasants prosperous. His share was dependent in large measure upon the production of his tenant. As a consequence, the landlord would lend money at no interest or low interest in times of crop failure, distress or illness. Now that the landlord is gone, this 'insurance' is gone; the government has not established credit cooperatives, so the money lenders are in a dominant position." W. G. Miller, op. cit., page 495.

51. A highly illustrative case on the lack of flexibility of the ADBI is described in "Sheibani Feedlot", a case study prepared in 1975 by J. C. Fischer for the Iran Center for Management Studies. The case involved the rejection of a loan request for a highly enterprising project in the province of Fars because the applicant farmer lacked the necessary title deeds despite having been in possession of the land since the land reforms.

52. All of the country's four multinational agribusiness concerns were in Kuzestan. They were Iran-California, Iran-American, Shell-Cott, and International Agribusiness. Two of the remaining concerns, Haft-Tapeh and Karun, were government-owned, while Galleh Agribusiness was a private concern. The agribusinesses in Kuzestan were established on lands belonging to some 60 villages, whose inhabitants, some 2,000 households, were compensated and resettled elsewhere.

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